WATLOW DIN-A-MITE

WATLOW®
Better Thermal Solutions...*Faster*

	DIN-A-MITE Style A	DIN-A-MITE Style B	DIN-A-MITE Style C	DIN-A-MITE Style D
1-Phase[1]	Up to 25A @ 600VAC	Up to 40A @ 600VAC	Up to 80A @ 600VAC	Up to 100A @ 600VAC
3-Phase, 2 leg[1]	No	Up to 33A @ 600VAC	Up to 80A @ 600VAC	Gang 2 units
3-Phase, 3 leg[1]	No	Up to 22A @ 600VAC	Up to 70A @ 600VAC	Gang 3 units
200KA SCCR	Yes	Yes	Yes	Yes
VAC and VDC - Burst Fire Contactor Input	24, 120 & 240VAC 4.5-32VDC	24, 120 & 240VAC 4.5-32VDC	24, 120 & 240VAC 4.5-32VDC	24, 120 & 240VAC 4.5-32VDC
Multizone VAC and VDC Input	No	Yes	Yes	No
4-20mA DC Input - Variable Time Base Output	Yes	Yes	Yes	Yes
Phase Angle Fire Output[2]	No	No	Yes 1-phase only	No
Manual Control Via Potentiometer Input, or 0-5, 1-5 or 0-10VDC Linear Voltage Input	No	No	Yes	No
Shorted SCR Alarm	No	Yes	Yes	Yes
Open Heater Alarm	No	No	Yes With "S" input only	No
Load Current Monitor CT	No	No	No	Yes
On Board Semiconductor Fusing	No	No	No	Yes
DIN-Rail Mount	Yes	Yes	Yes	No
Sub-Panel Mount	Yes	Yes	Yes	Yes
Cabinet Thru-Wall Heat Sink Mount UL® 50 and Class 1, Div. 2 per ANSI/ISA 12.12.01	No	No	Yes	No
Electrically Touch-Safe Package	Yes	Yes	Yes	Yes
Back-to-Back SCR Design	Yes	Yes	Yes	Yes
UL® 508 Listed/C-UL®/CE w/filter	Yes	Yes	Yes[2]	Yes
Dimensions	3.7 H x 1.8 W x 3.9 in. D (95 x 45 x 98 mm)	3.7 H x 3.1 W x 4.9 in. D (95 x 80 x 124 mm)	6.0 H x 3.1 W[3] x 5.7 in. D (150 x 80 x 146 mm)	7.25 H x 2.5 W x 9.4 in. D (185 x 65 x 240 mm)
Controller Weight: lbs (kg) Controller Weight w/fan: lbs (kg)	0.71 (0.32) N/A	1.5 (0.68) N/A	2.6 (1.18) 3.2 (1.45)	6.5 (2.95) N/A

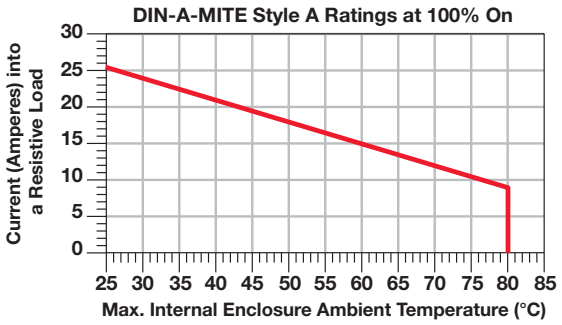
[1]Refer to curves on reverse side for specific ratings.
[2]Phase angle fire is not CE approved for conducted or radiated emissions.
[3]Will fit within the width dimension of most comparable MDRs.

ISO 9001
Registered Company
Winona, Minnesota USA
WIN-DFM-0310

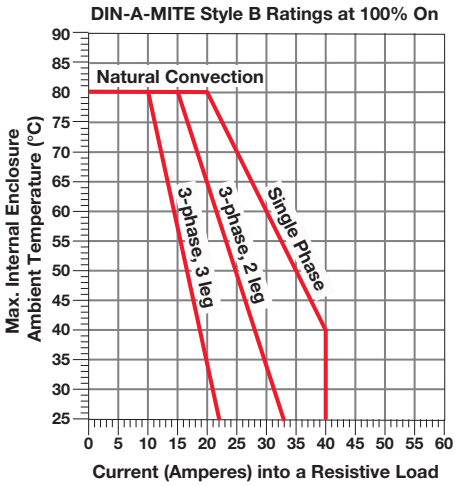
Watlow® and DIN-A-MITE® are registered trademarks of Watlow Electric Manufacturing Company.
UL® and C-UL® are registered trademarks of the Underwriter's Laboratories, Inc.

Amperage Curves

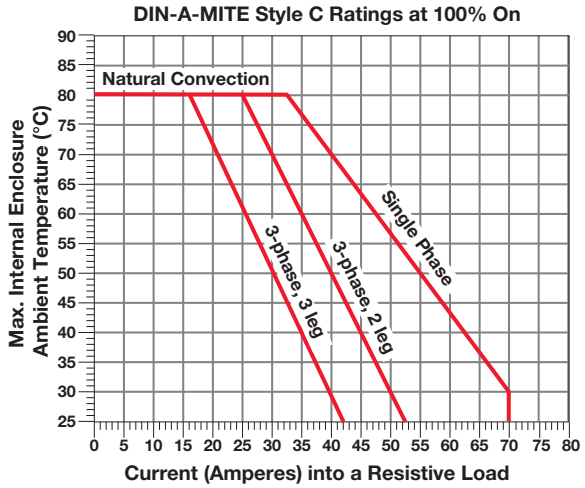
DIN-A-MITE A



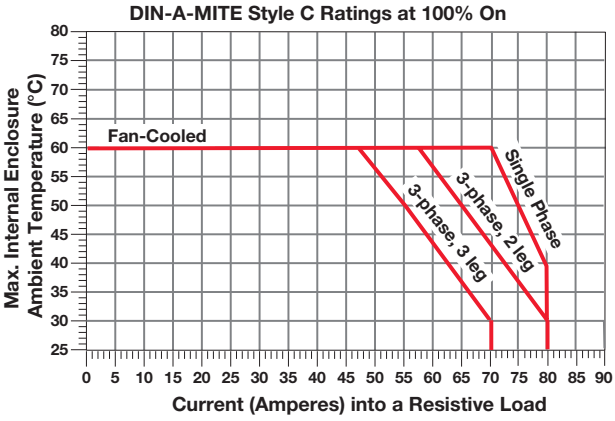
DIN-A-MITE B


DIN-A-MITE Style B Ratings at 100% On
Natural Convection
3-phase, 3 leg
3-phase, 2 leg
Single Phase
Max. Internal Enclosure Ambient Temperature (°C)
90 85 80 75 70 65 60 55 50 45 40 35 30 25
0 5 10 15 20 25 30 35 40 45 50 55 60
Current (Amperes) into a Resistive Load

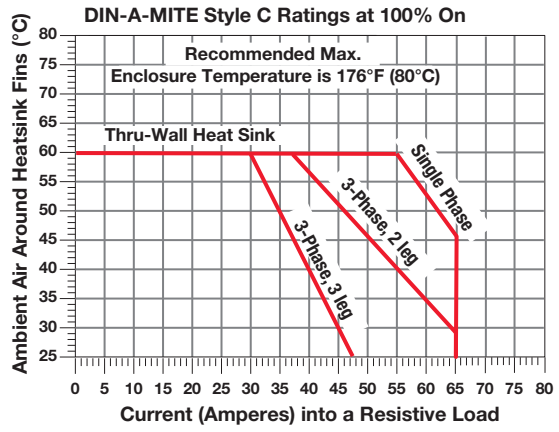
DIN-A-MITE C


DIN-A-MITE Style C Ratings at 100% On
Natural Convection
3-phase, 3 leg
3-phase, 2 leg
Single Phase
Max. Internal Enclosure Ambient Temperature (°C)
90 85 80 75 70 65 60 55 50 45 40 35 30 25
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
Current (Amperes) into a Resistive Load

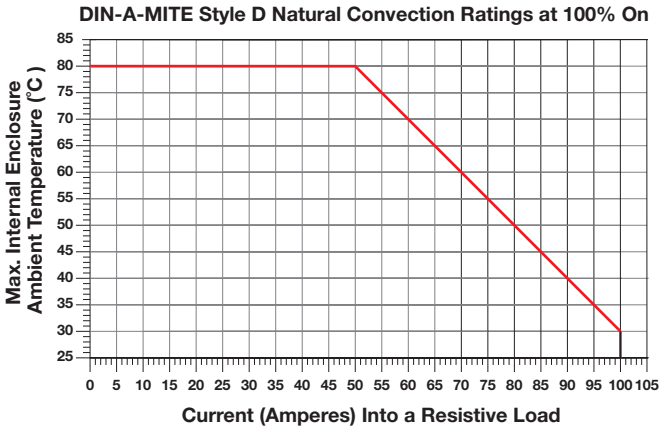
DIN-A-MITE C - Fan Cooled


DIN-A-MITE Style C Ratings at 100% On
Fan-Cooled
3-phase, 3 leg
3-phase, 2 leg
Single Phase
Max. Internal Enclosure Ambient Temperature (°C)
80 75 70 65 60 55 50 45 40 35 30 25
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
Current (Amperes) into a Resistive Load

DIN-A-MITE C - Thru-Wall


DIN-A-MITE Style C Ratings at 100% On
Recommended Max.
Enclosure Temperature is 176°F (80°C)
Thru-Wall Heat Sink
3-phase, 3 leg
3-phase, 2 leg
Single Phase
Ambient Air Around Heatsink Fins (°C)
80 75 70 65 60 55 50 45 40 35 30 25
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
Current (Amperes) into a Resistive Load

DIN-A-MITE D


DIN-A-MITE Style D Natural Convection Ratings at 100% On
Max. Internal Enclosure Ambient Temperature (°C)
85 80 75 70 65 60 55 50 45 40 35 30 25
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105
Current (Amperes) Into a Resistive Load

to Order Call 1.800.345.0369

Specifications

Operator Interface
- Command signal input
- Input indicator light LED

Amperage
- Single phase, see the output rating curve
- Max. I^2t for fusing: 4000A^2sec
- Latching current: 200mA
- Holding current: 100mA
- Power dissipation is 1.2 watts per amp switched
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual.

Line Voltage
- 20 to 660V~(ac) model number dependent; see ordering information
- Off-state leakage: 1mA at 77°F (25°C) max.
- 50/60Hz independent

Control Mode-Zero Cross
- Input control signal Type C: V⎓(dc) input contactor
- Input control signal Type K: V~(ac) input contactor
- To increase service life on contactor input models, the cycle time should be less than three seconds
- Input Control Signal Type F: 4 to 20mA⎓(dc) proportional variable time base control; 3 cycles on, 3 cycles off at 50% power

Input Command Signal
- AC contactor
  24V~(ac) ±10%, 120V~(ac) +10/-25%, 240V~(ac) +10/-25% @ 25mA max. per controlled leg
- DC Contactor
  4.5V⎓ to 32V⎓(dc): max. current @ 4.5 V⎓(dc) is 8mA per leg
- Loop powered linear current
  4mA⎓ to 20mA⎓(dc): loop-powered, input Type F0 option only (requires current source with 6.2V⎓(dc) available, no more than three DIN-A-MITE inputs can be connected in series)

Agency Approvals
- UL® 508-listed and C-UL® File E73741
- CE with proper filter:
  89/336/EEC Electromagnetic Compatibility Directive
  73/23/EEC Low Voltage Directive
  EN 61326 Industrial Immunity Cass A Emissions
  EN 50178 Safety Requirements

Input Terminals
- Compression: will accept 0.2 to 2 mm^2 (24 to 14 AWG) wire

Line and Load Terminals
- Compression: will accept 0.8 to 8.4 mm^2 (18 to 8 AWG) wire

Operating Environment
- Up to 176°F (80°C); see the output rating curve chart for your application
- 0 to 90% RH (relative humidity), non-condensing
- Installation only tested to 3,000 meters
- Units are suitable for “Pollution degree 2”

Mounting

Options include DIN-rail or standard back panel mounting
- The DIN-rail specification is: DIN EN 50022, 35 mm by 7.5 mm
- Mount the cooling fins vertically

Dimensions
- Height: 3.7 in. (95 mm) high x 1.8 in. (45 mm) wide x 3.9 in. (98 mm) deep
- Weight: 0.71 lb (0.32kg)

Specifications are subject to change without notice.

Ordering Information

To order, complete the code number on the right with the information below.

DIN-A-MITE Style A = Solid State Power Controller

D A 1 0 - _ _ _ - 0 _ _

Phase
1 = 1-phase, 1 controlled leg

Cooling and Current Rating
0 = Natural convection current rating 18A @ 50°C (see derating curve for current rating at other temperatures)

Line and Load Voltage
02 = 24 to 48V~(ac)
24 = 100 to 240V~(ac)
60 = 277 to 600V~(ac)

Input Type
C0 = 4.5 to 32V⎓(dc) contactor
F0 = 4 to 20mA⎓(dc) proportional
K1 = 22 to 26V~(ac) contactor
K2 = 100 to 120V~(ac) contactor
K3 = 200 to 240V~(ac) contactor

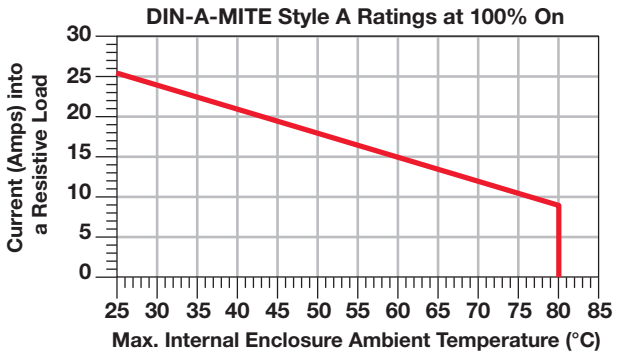
Manual Language
0 = English
1 = German
2 = Spanish
3 = French

Custom Parts Designation
00 = Standard parts

Recommended Semiconductor Fuse and Fuse Holder

	Watlow	Cooper Bussmann®	Ferraz Shawmut
Fuse	17-8025	FWC25A10F	L330014
Holder	17-5110	B24202	G81219

Output Rating Curve



Cooper Bussman® is a registered trademark of Cooper Bussman, Inc.

Specifications

Operator Interface
- Command signal input and indication light
- Alarm output and indication light

Amperage Rating
- See the output rating curve
- Max. surge current for 16.6ms, 380A peak
- Max. I^2t for fusing is 4,000A^2s
- Latching current: 200mA min.
- Holding current: 100mA min.
- Off-state leakage 1mA at 77°F (25°C) max.
- Power dissipation = 1.2 watts per amp per leg switched
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual.

Line Voltage
- 20 to 660V~(ac) model number dependent; see ordering information

Control Mode, Zero-Cross
- Input control signal Type C: V⎓(dc) input contactor
- Input control signal Type K: V~(ac) input contactor
- To increase service life on contactor input models the cycle time should be less than three seconds
- Input Control Signal Type F: 4 to 20mA⎓(dc) proportional variable time base control

Input Command Signal
- AC contactor
  24V~(ac) ±10%, 120V~(ac) +10/-25%, 240V~(ac) +10/-25% @ 25mA max. per controlled leg
- DC Contactor
  4.5 to 32V⎓(dc): max. current @ 4.5V⎓(dc) is 6mA per leg. Add 2mA per LED used to the total current
- Loop powered linear current
  4 to 20mA⎓(dc): loop-powered, input Type F0 option only (requires current source with 6.2V⎓(dc) available, no more than three DIN-A-MITE inputs connected in series); 3 cycles on, 3 cycles off at 50% power

Alarm

Shorted SCR Alarm Option
- Alarm state when the input command signal off and a 10A or more load current is detected by the current transformer (two turns required for 5A and three turns for 2.5A)

Alarm Output
- Energizes on alarm, non-latching
- Triac 24 to 240V~(ac), external supply with a current rating of 300mA @ 77°F (25°C), 200mA @ 122°F (50°C), 100mA @ 176°F (80°C) and a holding current of 200 µA with a latching current of 5mA typical

Agency Approvals
- CE with proper filter:
  89/336/EEC Electromagnetic Compatibility Directive
  EN 61326: Industrial Immunity Class A emissions
  73/23/EEC Low Voltage Directive
  EN 50178 Safety Requirements
  Installation category III, pollution degree 2
- UL® 508 listed and C-UL® File E73741

c UL us LISTED

Terminals
- Compression: will accept 0.2. to 2 mm^2 (24 to 14 AWG) wire

Line and Load Terminals
- Compression: will accept 0.8 to 8.4 mm^2 (18 to 8 AWG) wire

Operating Environment
- See the output rating curve
- 0 to 90% RH (relative humidity), non-condensing
- Storage temperature: -40 to 185°F (-40 to +85°C)
- Insulation only tested to 3,000 meters

DIN-rail Mount
- DIN EN 50022, 35 mm by 7.5 mm

Back Panel Mount
- Four mounting holes M3 to M4 (No. 6 to No. 8) fastener

Dimensions
- Height: 3.7 in. (95 mm) high x 3.1 in. (80 mm) wide x 4.9 in. (124 mm) deep
- Weight: 1.5 lb (0.68kg)

Specifications are subject to change without notice.

Ordering Information

To order, complete the code number on the right with the information below.

DIN-A-MITE Style B = Solid State Power Controller

D B - - -

Phase
1 = 1-phase, 1 controlled leg
2 = 3-phase, 2 controlled legs
3 = 3-phase, 3 controlled legs
8 = 2 independent zones (input control C or K)
9 = 3 independent zones (input control C or K)

Cooling and Current Rating Per Pole
0 = Natural convection standard DIN-rail or panel mount heat sink

Line and Load Voltage
02 = 24 to 48V~(ac)
24 = 120 to 240V~(ac)
60 = 277 to 600V~(ac)

Input Control Signal
C0 = 4.5 to 32V⎓(dc) contactor
F0 = 4 to 20mA⎓(dc) proportional
K1 = 22 to 26V~(ac) contactor
K2 = 100 to 120V~(ac) contactor
K3 = 200 to 240V~(ac) contactor

Alarm
0 = No alarm
S = Shorted SCR alarm

User Manual
0 = English
1 = German
2 = Spanish
3 = French

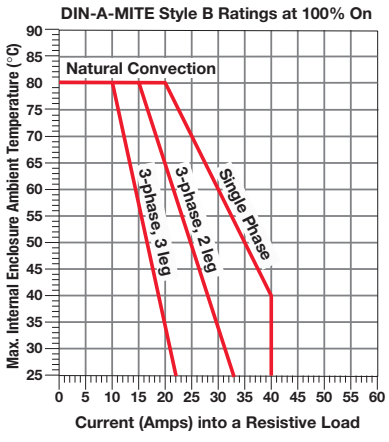
Custom Part Numbers
00 = Standard part
XX = Any letter or number, custom options, labeling, etc.

Recommended Semiconductor Fuse and Fuse Holders

		Fuse Part Number	
Fuse Rating	**Watlow**	**Cooper Bussmann®**	**Ferraz Shawmut**
20A	17-8020	FWC20A10F	K330013
25A	17-8025	FWC25A10F	L330014
40A	17-8040	FWC40A14F	A093909
50A	17-8050	FWC50A14F	B093910

		Fuse Holder Part Number	
Fuse Rating	**Watlow**	**Cooper Bussmann®**	**Ferraz Shawmut**
20A	17-5110	CHM1G	G81219
25A	17-5110	CHM1G	G81219
40A	17-5114	CH141G	J081221
50A	17-5114	CH141G	J081221

Output Rating Curve



Current Rating Table

Phase	Cooling	Current at 122°F (50°C)
1	0	35A
2, 8	0	25A
3, 9	0	17A

Cooper Bussman® is a registered trademark of Cooper Bussman, Inc.

Ordering Information

To order, complete the code number on the right with the information below:

Style C = Solid-State Power Controller **D C** - - -

Phase
1 = 1-phase, 1 controlled leg
2 = 3-phase, 2 controlled legs
3 = 3-phase, 3 controlled legs, (use with four wire wye)
8 = 2 independent zones (Input Type C, K)
9 = 3 independent zones (Input Type C, K)

Cooling and Current Rating Per Leg* (see chart below)
0 = Natural convection standard DIN-rail or panel heat sink
1 = Fan cooled 120V~(ac) standard DIN-rail or panel heat sink
2 = Fan cooled 240V~(ac) standard DIN-rail or panel heat sink.
3 = Fan cooled 24V⎓(dc) standard DIN-rail or panel heat sink
T = Natural convection through wall or cabinet heat sink (NEMA 4X)

Line and Load Voltage
02 = 24 to 48V~(ac) (control C, F, K)
12 = 100 to 120V~(ac) (control L, P, S)
20 = 200 to 208V~(ac) (control L, P, S)
24 = 100 to 240V~(ac) (control C, F, K): 230 to 240V~(ac) (control L, P, S)
27 = 277V~(ac) (control L, P, S)
40 = 400V~(ac) (control L, P, S)
48 = 480V~(ac) (control L, P, S)
60 = 277 to 600V~(ac) (control C, F, K): 600V~(ac) (control L, P, S)

Input Control Signal
C0 = 4.5 to 32V⎓(dc) contactor
F0 = 4 to 20mA⎓(dc) proportional
K1 = 22 to 26V~(ac) contactor
K2 = 100 to 120V~(ac) contactor
K3 = 200 to 240V~(ac) contactor
L (0 to 5) = Phase angle with current limiting① (single-phase only)
P (0 to 5) = Phase angle① (single-phase only)
S (0 to 5) = Single cycle variable time base
0 = 4 to 20mA
1 = 12 to 20mA (for input control signal option S only)
2 = 0 to 20mA
3 = 0 to 5V⎓(dc) proportional
4 = 1 to 5V⎓(dc) proportional
5 = 0 to 10V⎓(dc) proportional

Alarm
0 = No alarm
S = Shorted SCR alarm (zero cross models only)
H = Open-heater and shorted-SCR alarm (for input control signal Option S)

Language
0 = English
1 = German
2 = Spanish
3 = French

Custom Part Numbers
00 = Standard part
1X = 1-second soft start (control option P, L)
XX = Any letter or number, custom options, labeling, etc.

① Not CE Approved for conducted or radiated emissions.

*DIN-A-MITE C Current Rating Table

Phase	Cooling	Current at 50°C (122°F)
1	0	55A
1	T	60A
1	(1, 2, 3)	75A
2, 8	0	40A
2, 8	T	46A
2, 8	(1, 2, 3)	65A
3, 9	0	30A
3, 9	T	35A
3, 9	(1, 2, 3)	55A

Specifications

Amperage
- See the Output Rating Curve chart below
- Max. surge current for 16.6ms, 1,800A peak
- Latching current: 500mA min.
- Holding current: 200mA min.
- Power dissipation is 1.4 watts per amp switched including on-board fusing
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual

Line Voltage
- 24 to 48 V~(ac) units: 20 min. to 53V~(ac) max.
- 100 to 240 V~(ac) units: 48 min. to 265V~(ac) max.
- 277 to 480 V~(ac) units: 85 min. to 528V~(ac) max.
- 277 to 600 V~(ac) units: 85 min. to 660V~(ac) max.
- 50/60Hz independent +/-5%

Control Mode, Zero Cross
- Input control signal Type C: V⎓(dc) input contactor
- Input control signal Type K: V~(ac) input contactor
- To increase service life, the cycle time should be less than three seconds
- Input control signal Type F: 4 to 20mA⎓(dc) variable time base control

Input Command Signal
- AC contactor, 24V~(ac) ±10%, 120V~(ac) +10/-25%, 240V~(ac) +10/-25% @ 25 mA max. per controlled leg
- DC Contactor, 4.5 to 32 V⎓(dc): max. current @ 4.5V⎓(dc) is 8mA per leg
- Loop powered linear current 4 to 20mA⎓(dc), input Type F0 option only, no more than three DIN-A-MITE inputs connected in series

Alarm

Shorted SCR Alarm Option
- Alarm state when the input command signal off and a 15A or more load current is detected by the current transformer

Alarm Output
- Energizes on alarm, non-latching
- Triac 24 to 240V~(ac) external supply with a current rating of 300mA @ 77°F (25°C)

Current Sensing
- On-board current transformer (CT), typically 0.2 V~(ac) output signal per ampere sensed into 1,000Ω load

Agency Approvals
- CE with proper filter:
  89/336/EEC Electromagnetic Compatibility Directive
  EN 61326: Industrial Immunity Class A Emissions
  Not suitable for Class B emissions environment
  73/23/EEC Low Voltage Directive
  EN 50178 Safety Requirements
- c UL us LISTED UL® 508-listed and C-UL® File E73741

Input Terminals
- Compression: will accept 0.13 to 3.3 mm² (26 to 12 AWG) wire

Line and Load Terminals
- Compression: will accept 13.3 to 33.6 mm² (6 to 2 AWG) wire

Operating Environment
- Operating temperature range: 32 to 185°F (0 to 85°C)
- 0 to 90% RH (relative humidity), non-condensing
- Vibration: 2 g, 10Hz to 150Hz, applied in any one of three axes
- Storage temperature: -40 to 185°F (-40 to 85°C)
- Insulation tested to 3,000 meters
- Installation Category III, pollution degree 2

Mounting
- Back panel mounting; fits the same mounting pattern as a 100A, single-phase mercury displacement relay
- On-board semiconductor fusing

Dimensions
- Height: 7.25 in. (185 mm) high x 2.5 in. (65 mm) wide x 9.4 in. (240 mm) deep
- Weight: 6.5 lb (2.95kg)

Specifications are subject to change without notice.

Ordering Information

To order, complete the model number on the right with the information below.

DIN-A-MITE Style D = Solid State Power Controller

D D 1 0 - _ _ - _

Phase
1 = 1-phase, 1 controlled leg

Cooling and Current Rating
0 = Natural convection current rating 80A @ 122°F (50°C) (Note: see the output rating curve for the current rating at other temperatures)

Line and Load Voltage
02 = 24 to 48V~(ac)
24 = 100 to 240V~(ac)
48 = 277 to 480V~(ac)
60 = 277 to 600V~(ac)

Input Control Signal
C0 = 4.5 to 32V⎓(dc) contactor
F0 = 4 to 20mA⎓(dc) proportional
K1 = 22 to 26V~(ac) contactor
K2 = 100 to 120V~(ac) contactor
K3 = 200 to 240V~(ac) contactor

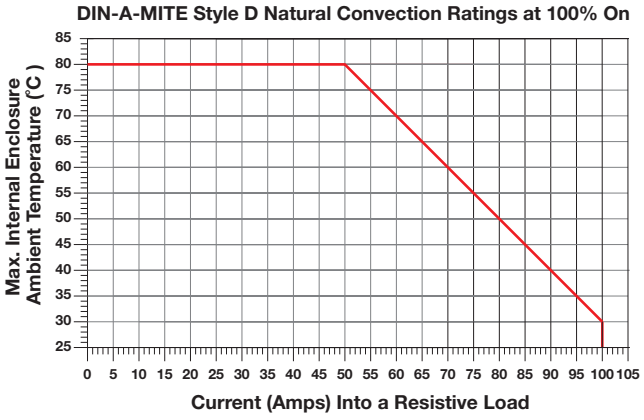
Current Sensing or Alarm
0 = No alarm
1 = Load current transformer
S = Shorted SCR alarm

User Manual Language
0 = English
1 = German
2 = Spanish
3 = French

Custom Options
00 = Standard parts

Recommended Semiconductor Fuse:
Watlow P/N: 0808-0096-0000
Cooper Bussmann® P/N: 170N3437

Output Rating Curve



Cooper Bussman® is a registered trademark of Cooper Bussman, Inc.